

CLAIMS

What is claimed is:

1. A merged queue circuit comprising:

5 a first array of priority cells for indicating a priority of a plurality of cells;

a second array of destination cells for indicating a destination of said plurality of cells;

a priority selector for selecting a portion of said plurality of cells according to a priority selection; and

10 a grant generator for granting at least one connection request associated with cells of said portion.

2. The merged queue circuit of Claim 1 wherein said grant generator comprises a binary round robin tree for granting said connection request.

15 3. The merged queue circuit of Claim 1 wherein said first array comprises five-bit priority cells.

4. The merged queue circuit of Claim 1 wherein said second array
20 comprises five-bit destination cells.

5. The merged queue circuit of Claim 1 further comprising an age selector for generating a connection request associated with a cell of said portion in response

to a plurality of cells of said portion having the same said destination.

6. The merged queue circuit of Claim 1 further comprising a distributed OR gate for transmitting a cell to said destination.

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7. The merged queue circuit of Claim 1 wherein said grant generator randomly grants said connection request.

8. A method for switching data at a merged queue, said method

10 comprising:

receiving a plurality of cells;

recording a priority value of at least one cell of said plurality of cells at a priority cell array;

recording a destination value of at least one cell of said plurality of cells at a

15 destination cell array;

receiving a priority selection for selecting a portion of said plurality of cells; and

granting at least one connection request associated with cells of said portion.

9. The method of Claim 8, wherein said granting at least one said

20 connection request is performed according to a binary round robin tree (BRRT).

10. The method of Claim 8, wherein said granting at least one said connection request is performed randomly.

11. The method of Claim 8 wherein said priority cell array comprises five-bit priority cells.

5 12. The method of Claim 8 wherein said destination cell array comprises five-bit destination cells.

13. The method of Claim 8 further comprising assigning an age tag to at least one cell of said plurality of cells.

10 14. The method of Claim 13 further comprising generating a connection request associated with a cell of said portion assigned an older age tag in response to a plurality of cells of said portion having the same said destination.

15 15. A system for switching data at a merged queue, said system comprising:

means for receiving a plurality of cells;

means for recording a priority value of at least one cell of said plurality of cells at a priority cell array;

20 means for recording a destination value of at least one cell of said plurality of cells at a destination cell array;

means for receiving a priority selection for selecting a portion of said plurality of cells; and

means for granting at least one connection request associated with cells of said portion.

16. The system of Claim 15, wherein said means for granting at least one
5 said connection request comprises a binary round robin tree (BRRT).

17. The system of Claim 15, wherein said means for granting at least one said connection request randomly grants said connection request.

10 18. The system of Claim 15 wherein said priority cell array comprises five-bit priority cells.

19. The system of Claim 15 wherein said destination cell array comprises five-bit destination cells.

15 20. The system of Claim 19 further comprising means for assigning an age tag to at least one cell of said plurality of cells.

21. The system of Claim 15 further comprising means for generating a
20 connection request associated with a cell of said portion assigned an older age tag in response to a plurality of cells of said portion having the same said destination.

22. The system of Claim 15 further comprising means for transmitting a cell

to said destination.

23. A merged queue comprising:

an input queue for receiving a plurality of cells;

5 a first array of priority cells for indicating a priority of at least one cell of a plurality of cells, wherein a portion of said plurality of cells is selected according to a priority selection; and

a second array of destination cells for indicating a destination of at least one cells of said plurality of cells, wherein a connection request is generated based on a
10 destination of cells of said portion.

24. The merged queue of Claim 23 wherein at least one connection request is granted according to a binary round robin tree.

15 25. The merged queue of Claim 23 wherein at least one connection request is granted randomly.

26. The merged queue of Claim 23 wherein said first array comprises five-bit priority cells.

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27. The merged queue of Claim 23 wherein said second array comprises five-bit destination cells.

28. The merged queue of Claim 23 wherein, provided at least two cells of said portion have the same said destination, a connection request associated with an older cell of said cells having the same said destination is generated.

5 29. The merged queue of Claim 23 wherein a cell is transmitted to said destination according to a distributed OR gate.